REMARKS

The Final Office action dated April 3, 2008 has been received and its contents carefully noted. Claims 5, 6, 8-11, 14 and 16-20 were pending and indicated as rejected.

By this Response, new claim 31 has been added. No new subject matter has been added. Support for all claimed subject matter can be found in the original disclosure.

Accompanying this Response is a Petition for a 3 month Extension of Time with the requisite fee for filing on or before October 3, 2008. Also, an RCE Request form is submitted with the requisite fee.

Claim Rejections - 35 U.S.C. § 103(a)

Claims 5, 6, 8, 14-16 and 20-30 stand rejected as being unpatentable over Raaijmakers et al. (US 5,460,689) in view of Nowak et al. (US 6,220,201) in view of Forster et al. (EP 0 685 873 A1) in view of Qian et al. (US 6,447, 636). The rejection as to claims 5, 6, 8, 14-16 and 20-30 is traversed.

In reference to independent claims 5 and 6

It is respectfully submitted that the overall combination of references relied upon in the obviousness rejection of claims 5 and 6 fails to disclose or suggest the claimed arrangement of claims 5 and 6. As described in the present applications disclosure, because high-frequency electric power is supplied only to the antenna means during plasma processing, high bias voltages do not generate in the substrate-to-be-processed. Accordingly, the present invention can prevent the substrate-to-be-processed from damage during plasma processing. A review of the prior art reveals the references noted

above fail to disclose or suggest an arrangement like that of claims 5 and 6 which provides this advantage in the claimed environment.

Qian et al. teaches supplying high-frequency electric power to the antenna means while reducing or switching off supply of high-frequency electric power to the electrode 220 (the conducting member).

However, Qian et al. still supplies high-frequency electric power to the mount (the pedestal 107) even after switching off supply of high-frequency electric power to the conducting member (the electrode 220).

This is clearly described in column 9, lines 24-28 of Qian et al. as "The voltage on the electrode 220 may be turned off so that during processing coupling from the source power is essential inductive only, while the bias power supply 106 supplies capacitively coupled bias power."

In contrast, according to the present invention, the second high-frequency electric power source stops supplying high-frequency electric power to the mount after the first high-frequency electric power source has started the supply of the high-frequency electric power to the antenna means.

According to the present invent, high-frequency electric power is supplied only to the antenna means during plasma processing.

Thus, according to the present invention, the high bias voltages are not generated in the substrate-to-be-processed by stopping the second high-frequency electric power

source supplying high-frequency electric power to the mount after the first high-frequency electric power source has started the supply of high-frequency electric power to the antenna.

Because the substrate-to-be-processed is not impressed by the high bias voltages during plasma processing, it can avoid damages to the substrate-to-be-processed during plasma processing (Please refer to page 8, lines 18-19 of the specification of this application).

In the Office Action there is indicated:

> "Applicant argues that since according to Qian et al., high-frequency electric power is supplied continuously to the mount (the pedestal 107) even after switching off supply of high-frequency electric power to the conducting member (the electrode 220), Qian et al. fails to teach that the second high-frequency electric power source is stopped supplying high-frequency electric power to the mount after the first high-frequency electric power source has started the supply of the high-frequency electric power to the antenna means so that high-frequency electric power is supplied only to the antenna means. The argument is not persuasive to overcome the rejection of the applied Prior Art, because Nowak teaches that it is alternatively known to strike plasma using RF power supplied to the mount as an electrode, while preferably grounding the top electrode. (col. 4, lines 32-40)"

The asserted grounds raised in support of the rejection of claims 5 and 6 fails to properly consider that it is the base reference to Raaijmakers et al. that is being modified by the noted secondary references in the Office Action. That is, a review of the process set out in Raaijmakers et al. establishes that the asserted modification (based on Nowak

and/or Qian) in the power up sequence is not suited for the process of Raaijmakers et al. For example, Raaijmakers et al. states, "After the plasma has been ignited, the RF power to the pedestal is turned on and both RF supplies are brought up to full process power levels to begin the first phase of the pre-clean etch (step 68)". See col. 4, lines 50-53. Raaijmakers expressly teaches bringing both power supplies into full process. Thus, introducing the purported limitations of Nowak regarding successively starting the power sources such that only the antenna is powered would not have been undertaken by one of ordinary skill in the art. In this regard, reference is also made to the disclosure in col. 6, lines 19-38 of Raaijmakers et al. wherein there is described the desired ion application (*e.g.,* sequence and direction) to the substrate. As seen Raaijmakers et al. powered up pedestal is utilized to achieve the desired ion application which would be lost by the asserted modification in the Office Action. Accordingly, it is respectfully submitted that the asserted modification is not appropriate in the context of the above described obviousness combination.

Accordingly, it is respectfully submitted that the combined features of Raaijmakers et al., Nowak et al., Forster et al., and Qian et al. fail to present a *prima facie* case of obviousness relative to claims 5 and 6 of the present application disclosed or suggested a plasma processing method as disclosed by the present invention.

In reference to independent claim 27

Applicants again, respectfully submit that, Raaijmakers et al., Nowak et al., Forster et al., and Qian et al. whether together alone or in combination fail to present a

pima facie case of obviousness relative to the claimed arrangements of having a conducting member that is permanently grounded, which is disposed upper of the top wall of the belljar in order to ignite plasmas between the mount and itself. In the last Office Action reference is made to Forster providing a basis for modifying Nowak in an effort to establish the obviousness of the above described grounding arrangement. However, as clearly seen from the electrical diagram in Fig. 5 of Forster, it too fails to disclose or suggest the above described grounding arrangement of claims 5 and 6.

With respect to claims 8, 14-16 and 20-30, similar arguments as provided on the merits for claims 5, 6 and 27 are respectfully submitted to be equally applicable. Accordingly, Applicant also solicits withdrawal and reconsideration of claims 8, 14-16 and 20-30 in addition to claims 5 and 6.

Claims 9 and 17 stand rejected as being unpatentable over Raaijmakers et al. (US 5,460,689) in view of Nowak et al. (US 6,220,201) in view of Forster et al. (EP 0 685 873 A1) in view of Qian et al. (US 6,447, 636) as applied to claims 6, 6, 8, 14-16 and 20-30 above and further in view of Brcka (US 6,652,711). Also, Claims10-11 and 18-19 stand rejected as being unpatentable over Raaijmakers et al. (US 5,460,689) in view of Nowak et al. (US 6,220,201) in view of Forster et al. (EP 0 685 873 A1) in view of Qian et al. (US 6,447, 636) in view of Brcka as applied to claims 9 and 17 and further in view of Liu et al. (US 6,776,170). The rejection as to claims 9-11 and 17-19 are traversed.

With respect to claims 9-11 and 17-19, similar arguments as provided on the merits for claims 5, 6 and 27 are respectfully submitted to be equally applicable. Accordingly, Applicant solicits withdrawal and reconsideration of claims 9-11 and 17-19.

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Therefore, it is respectfully requested that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

If any fees are due in connection with the filing of this Amendment, such as fees under 37 C.F.R. §§1.16 or 1.17, please charge the fees to Deposit Account 02-4300; Order No. 033082R167.

Respectfully submitted,

SMITH, GAMBRELL & RUSSELL, LLP

By: _____

Dennis C. Rodgers, Reg. No. 32,936
1130 Connecticut Avenue, N.W., Suite 1130
Washington DC 20036
Telephone: 202-263-4300
Facsimile: 202-263-4329

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